



**British Journal of Economics, Management & Trade**  
15(2): 1-8, 2016, Article no.BJEMT.27425  
ISSN: 2278-098X



SCIENCEDOMAIN *international*  
[www.sciencedomain.org](http://www.sciencedomain.org)

# Model Development of Home Industries to Increase Business Scale Using Analytic Hierarchy Process (AHP): A Case Study in Kendal Regency, Central Java, Indonesia

Nugroho B. Sukamdani<sup>1</sup>, Kholil<sup>2\*</sup>, Kohar Sulistyadi<sup>1</sup> and Nunung Nurhayati<sup>3</sup>

<sup>1</sup>Sahid University, Jakarta, Indonesia.

<sup>2</sup>Department of Environmental, Sahid University, Jakarta, Indonesia.

<sup>3</sup>Department of Food Technology, Bogor Agriculture University, Indonesia.

## Authors' contributions

*This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.*

## Article Information

DOI: 10.9734/BJEMT/2016/27425

### Editor(s):

- (1) Paulo Jorge Silveira Ferreira, Superior School of Agriculture of Elvas (Polytechnic Institute of Portalegre), Portugal.
- (2) Chiang-Ming Chen, Department of Economics, National Chi Nan University, Taiwan.
- (3) John M. Polimeni, Associate Professor of Economics, Albany College of Pharmacy & Health Sciences, New York, USA.

### Reviewers:

- (1) Jane Queen Omwenga, Jomo Kenyatta University of Agriculture And Technology, Kenya.
  - (2) Mahendar Kumar, Siam University, Thailand.
  - (3) Xiaojing Wang, Shanghai Ocean University, China.
  - (4) Job N. Nmadu, Federal University of Technology, Minna, Nigeria.
  - (5) Nwankwo Cosmas Anayochukwu, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Nigeria.
  - (6) Roberto E. Cervelló Royo, Universidad Politécnica de Valencia (UPV), Spain.
- Complete Peer review History: <http://www.sciencedomain.org/review-history/16586>

Original Research Article

Received 31<sup>st</sup> May 2016  
Accepted 23<sup>rd</sup> September 2016  
Published 17<sup>th</sup> October 2016

## ABSTRACT

Women have a big role to increase family welfare with out reducing her main obligation as a housewife. Home industries (HI) is one of the most suitable activities for women, because production process can be done with household activities. The purpose of this paper is to choose the best strategy for developing business scale of home industries gender responsive. Method used is AHP (Analytical Hierarchy Process) and SAST (Strategic Assumption Surfacing and Testing). Results study showed there are five main barriers to develop home industries: technological process, capital, corporate governance, marketing, and legal aspect. There are three

\*Corresponding author: E-mail: [kholil2005@yahoo.com](mailto:kholil2005@yahoo.com);

groups of home industries: beginner, developing and developed, which different characteristics. The best strategy to develop business scale of home industry is productivity and technology empowerment program.

*Keywords: Women role; family welfare; home industry; performance; AHP; SAST.*

## 1. BACKGROUND

Home industries (HI) have major role in economic and welfare development of the people. One of the most important roles is as a social safety net, because it can absorb a very large workforce, and reducing the number of unemployment. The number of home industries currently around 40 million, with total of workforce 110 million [1]. Almost home industries are managed by women especially for beginner. This mean that wopen have great potential to develop family economics. Home industries is an industries that employ fewer than six people, limited capital, and integrates with households activities, and all of workers are family [2,3,4].

Although women have a very big role in their families, and even national development, but policies and their implementations is still not providing any space for women to live as they should. Access, participation, and control on economic resources are limited. The role and participation of women in micro enterprises are still often overlooked with their obligation as a housewife, even their activities in home industries always fused with her role as a housewife, no separation in managing finances, labor and spending [5,6].

There are some characteristics of Home industries: (a) limited capital, (b) run by women as subcontracting workers or homeworkers and family labor, but their participation rarely recognized, (c) low wage, [5,7]. Generally home industries are characterized by four aspects (a) integrated with households, (b) unskilled labor, (c) low technology and (d) unbankable. Labour force of wopen has a positive correlation with economic growth [8]. In reality women behaviour have a significant influence on the productivity of home industries [9], there are two important aspects for developing home industries in the term of business scale: wive and partner [5,10]. The technologies used in home industries is very simple and all of production process is manual (*handmade*), moreover, they rely on their own capitals not on the bank's capital [7]. Women leader in Small Medium Enterprise (SME) have a stronger motivation and spirit of the men, and

women are more patient and resilient than men in dealing with business constraint [11].

There are three type of home industries by level of business continuity, capital, production process technology, number of workforce, and sales system. They are: (1) Startup home industries which is characterized by 1-2 workers whom all members are family, non-continuous production and average income/month 1-5 million. (2) Developing home industries which is characterized by continuous production and fixed sales system, capital is around 25 - 50 million rupiah of personal assets and microfinance credit, 2-5 workers, and (3) Developed home industries characterized by 5-10 workers including the owner, bank credit, production process using technology, business and finance are managed professionally [2,5].

The proportion of home industry is currently dominated by the beginner (60-70%) beginner, developing 20-30% and developed 5-10% [4]. This mean that majority of home industries are not competitive and weak, and only small proportion are well managed [3,12].

Due to the role of home industry in improving the welfare of families, especially poor families; the government wants to increase business scale of home industry. Therefore since 2012 Kendal Regency has been appointed to be the pilot project of national home industry development.

As a pilot project of national home industry development, local government wants to choose the most appropriate strategy to develop home industry business scale in accordance with the level (beginner / start up, developing and developed).

The purpose of this study is to select the most appropriate strategy to develop business scale of home industry which can be replicated nationally.

## 2. METHODOLOGY

Data was collected by experts discussion and questionnaire which involved local government, academics of local Universities, and business of home industries, and field visit to see directly the activities of home industry. Data analysis by

SAST (Strategic Assumption Surfacing and Testing) method which was developed by Mason and Mitroff (1981), and AHP (Analytical Hierarchy Process) developed by Saaty (1983).

SAST was selected to determine basic assumptions which must be considered in home industry development. This analysis is based on response to questionnaire from experts [13], while AHP to determine the appropriate strategy based on experts discussion [14,15,16]. Based on experts discussion generally AHP structure (Fig. 1).

### 3. RESULTS AND DISCUSSION

Public perception on women’s occupation always places it in the context of household activities. Most of women’s work, especially in villages, is revolved around household, so it’s not easy to clearly separate the types or characteristics in market or non-market, economic or non-economic, production or reproduction groups. The difficulty leads to simplification of definition of women’s occupations because a lot of work activities take place at home.

Based on a study of 54 examples of home industry in the Kendal Regency showed only 5.7% were categorized as developed, while most of the others (82.3%) beginner and 12% as a developing groups. The workers mostly women, working without separation with household chores, and with out health insurance. Most beginner group come from non bank capital owners, with a profit-sharing system agreed by both parties. While in developing and developed groups already using the bank’s capital. Women more involved at beginner groups, otherwise at developed groups men a bigger role. In the developing groups of home industries men and women have an equal role in business management.

There are 7 indicators related to home industry development in Kendal Regency, which are shown in Table 1.

Based on Table 1 shows that there are differences in the characteristics of the three-level home industry (start-up, developing and developed) especially in terms of capital, production, business factors, continuity and business environment factors. Therefore, the development strategy should be different according to their characteristics.

Strategic assumptions were formulated from the results of meetings and discussions between experts from various fields. The assumptions were (A) Initiative and creativity of female entrepreneurs in producing potentials of Startup home industry, (B) Market capability and opportunities identified, (C) Innovation and implementation of technologies owned by female entrepreneurs, (D) Coordinated and planned participation of Local Government, (E) The function of Women Empowerment Agency, (F) NGOs’ participation in improving gender equality in local economic activities, (G) The function of business consultation agencies in reinforcing the business continuity of home industry, (H) The function of financial institutions in reinforcing the capital of Startup home industry, (I) Local Government Leaders policies, who motivated and guided home industry development, (J) home industry partnership with large enterprises/large traders in marketing and improving product quality and (K) Relation between poverty alleviation program and home industry reinforcement and progress. Analysis results showed that all of assumptions in quadrant 1, which mean importance and certainty for home industry development, as shown in Fig. 2.

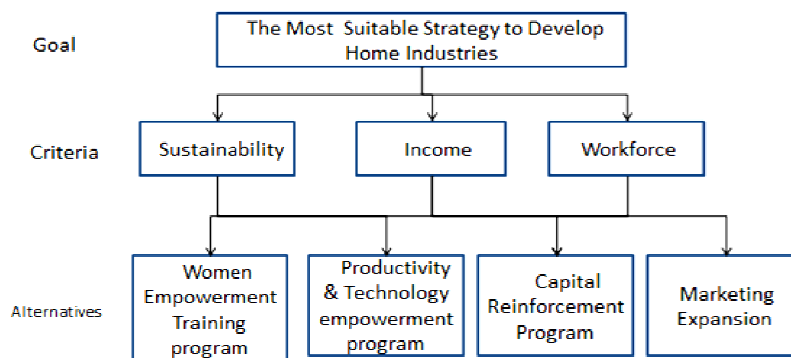


Fig. 1. AHP structure of home industry development

Table 1. Identification of characters of home industry

Factor and benchmark	Parameter		
	Home industry beginner/Startup	Home industry developing	Home industry developed
<b>A. Human resources factors</b>			
1. Entrepreneur/Manager/Owner	F(1), M(0-1)	F(1-2), M(0)	F(3-5), M(0)
2. Part time worker	F(0-2), M(0-2)	F(2-5), M(2-5)	F(5-10), M(5-10)
3. Full time worker	F(0), M(0)	F(1-5), M(0-3)	F(3-10), M(3-5)
<b>B. Capital factors</b>			
1. Own capital	Plenty (80-100%)	Some (0-40%)	Few (0-10%)
2. Loans from relatives/ colleagues	Some (0-20%)	Some (0-40%)	Few (0-20%)
3. Revolving fund/and State/ Local budget reinforcement	None	Plenty (20-60%)	Few (0-30%)
4. Cheap credit	None	Few (0-20%)	Some (20-60%)
5. Banking Credit/KUR	None	None	Plenty (40-80%)
<b>C. Production factors</b>			
1. Technology application	Simple	Efficient	Modern
2. Product quality provision	Good	Good	Very good
3. Raw material provision	Irregular	Regular	Stock
4. Process management	Unstructured	Structured	Applying key Performance Index
5. Business administration	Manual	Semi - electronic	Electronic
<b>D. Business factors</b>			
1. Raw material market	Unpredictable	Fluctuating	Predictable
2. Production cost	Uncounted	Recorded	Recording and Counted
3. Selling price	Unpredictable	Fluctuating	Periodic Certainty
4. Profit Estimation / Income Per Period	300 thousand – 1 million/month	1-5 million/month	> 5 million/month
5. Minimum feasibility	Breakeven	B/C : 1.2 – 1.5	B/C : > 1.5
<b>E. Business continuity factors</b>			
1. Product marketing	Unpredictable	Certain Buyers	Regular Buyers
2. Consumer character	Very varied	Varied	Standard
3. Change of process technology	Infrequent	Frequent	Frequent
4. Environmental control	None	Few	Regular
5. Business license	Informal	Semi – formal	Formal
<b>F. Business environment factors</b>			
1. Market scope	Local	Local in the region	Interlocal
2. External capital access	None	Difficult	Plenty
3. Transportation/Road Access	None	Optional	Required
4. Infrastructures: Water / energy	Inadequate	Inadequate	Adequate
5. Institutional support	Low	Inadequate	High
<b>G. Social factors</b>			
1. Gender equality in business decision making	Very good	Good	Adequate
2. Empowerment by business world	None	Some	Initiative
3. Participation of community activities	High	Medium	Low
4. Labors' education	Literate – Elementary school	Junior High School – High School	> High School

Of 11 variable assumptions Coordinated and planned participation of Local Government (D) and Local Government Leaders policies, who motivated and guided home industry development (I). This means that the development of home industries is highly dependent on the willingness and policy of local government leaders. These support the results of previous research, [17,18,19].

The result of AHP analysis showed that Productivity and Technology Improvement Program (0.400) is the highest priority program, then followed by Capital Reinforcement Program (0.332), Product Marketing Expansion (0.197) and finally Women Empowerment (0.072). While the main criterion is sustainability, as shown in Fig. 3.

As described above, that most of home industry is a beginner groups, who are still using very simple technology in producing goods (hand made) with limited capital, so priority strategies to improve the performance of home industry is providing technological support and capital loan.

Home Industry is a private business unit where performance and competitiveness is the indicator of success [20]. Performance is measured by how it obtains income, control budget and comply with regulations in effect. Home industries is a business which a legal practice to obtain monetary income by adding profit or reducing cost [21,22]. Therefore, home industry development requires flexible mechanism and cross-sectoral support from central and local government agencies [23,24,25].

The start-up stage/beginner is started by entrepreneurial ideas to capture market opportunities. After startup home industry is established, despite the high bankruptcy rate, it should be maintained to become Developing home industry. The next stage is expanding the business into Developed home industry which is formalized by development process into Cooperatives or Limited Liability Company SME. The following table shows medium-term plan in home industry transformation process.

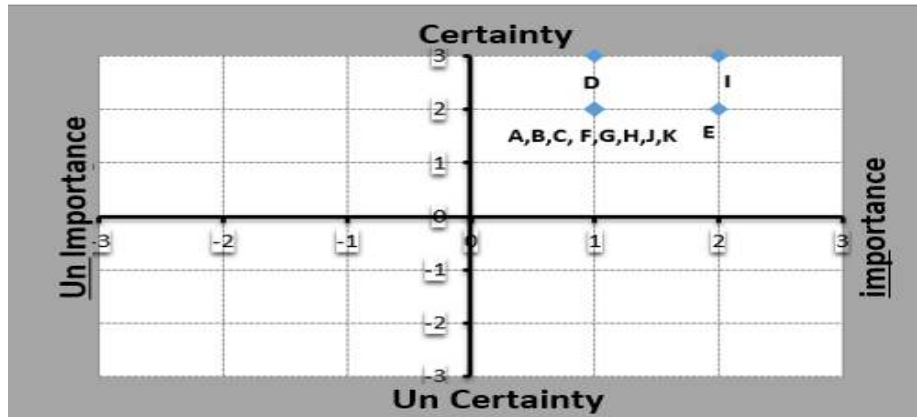


Fig. 2. Quadrant of SAST assumptions

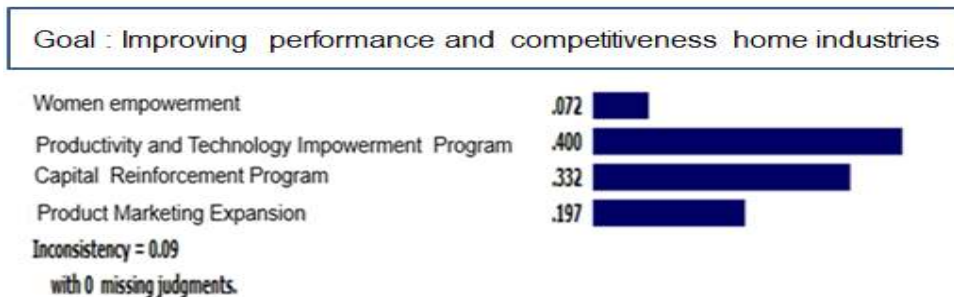
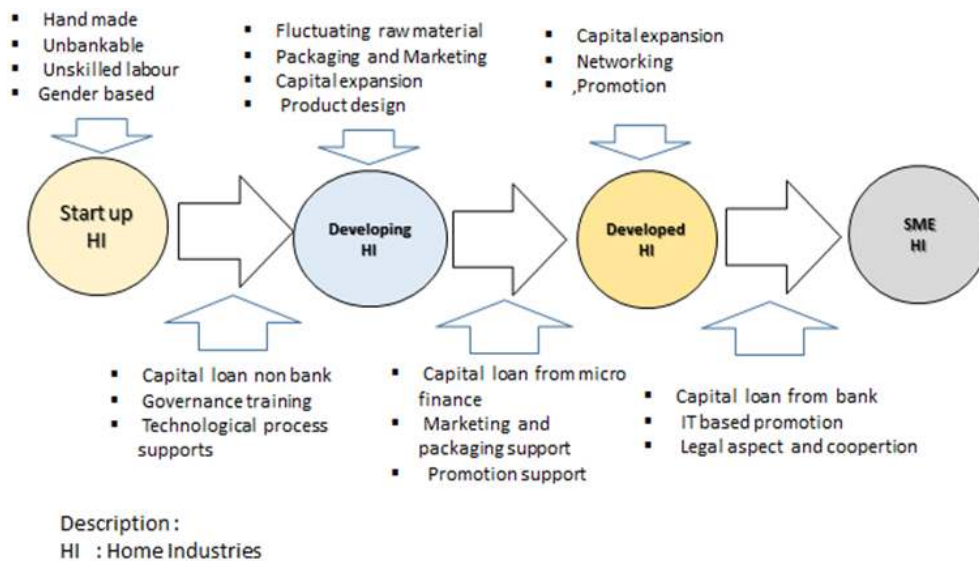


Fig. 3. Program priority

**Table 2. The support required for HI transformation**

Note	Transformation of Startup HI → Developing HI	Transformation of Developing HI → Developed HI	Transformation of Developed HI → SME
Required support	<ol style="list-style-type: none"> <li>1. Non-bank capital loan</li> <li>2. Process technology fits products</li> <li>3. Training /consultation from Local Government/ Regional Work Units (Management, business, TTG, Character development, Entrepreneurship)</li> <li>4. Sanitation and cleanliness of business environment</li> <li>5. Business grouping (KUBE)</li> </ol>	<ol style="list-style-type: none"> <li>1. Product packaging (Technique, design, material)</li> <li>2. Marketing expansion (E-commerce, online)</li> <li>3. The role of local governments in promotion</li> <li>4. Process technology (Improving quality and added values)</li> <li>5. Institutional status, the role of local governments (Pre cooperative)</li> <li>6. Expansion of production location to increase capacity</li> <li>7. Capital from micro financial institutions (LKM/KSP)</li> </ol>	<ol style="list-style-type: none"> <li>1. Soft Loan Capital from Banks</li> <li>2. Product packaging (design)</li> <li>3. Production diversification</li> <li>4. The role of local governments in promotion outside of the regions</li> <li>5. Improving the quality of Human Resources</li> <li>6. Business legality</li> </ol>



**Fig. 4. Transformation process of home industry**

Similar to other enterprises, home industry is also expected to grow the business to a larger scale to create family welfare. The requirements of the transformation of home industry are shown in above Table 2, while the transformation of home industry (HI) is shown in above Fig. 4.

## 4. CONCLUSION AND SUGGESTION

### 4.1 Conclusion

Women have a major role to improve the welfare of the family through home industries,

whether in terms of economic, health or education aspects, and more harmonious relations between family members. No value chain in the production system of home industries, produsen directly as a marketer. There are three models strategy to develop home industries: (a) from start up to developing: technological process support, capital loan non banks (micro finance), governance training; and marketing (b) from developing to developed: packaging; marketing, capital loan from micro finance; (c) from developed to SME: soft loan capital from banks, promotion and business legality.

## 4.2 Suggestion

To improve the role of home industry in family economics, government's policy support and cooperation among them are the most important aspects. The government also should facilitate access to micro finance, network marketing and training to improve their skill.

## COMPETING INTERESTS

This study purely for scientific purposes, no interest of the authors behind the results obtained.

## REFERENCES

1. Anonymous. Home Industries prospect and challenges in Indonesia. Ministry of Women Empowerment and Child Protection Republic of Indonesia. Jakarta; 2014.
2. Anonymous. Obstacles and constraints of gender based home industries development in Indonesia. Ministry of Women Empowerment and Child Protection Republic of Indonesia. Jakarta; 2013.
3. Ahimsa P.H. Sumintarsih, Sarmini, Raharjana DT. Economic moral, rational, and politics of small industries in center java. Kepel Press. Yogyakarta; 2003.
4. Sujatmiko. Indonesian dictionary. First edition. Aksara Sinergi, Surakarta; 2014.
5. Anonymous. Annual Report Ministry of Women empowerment and Child Protection, Republic of Indonesia, Jakarta; 2011.
6. Bradshaw J. Castellino, Bineta Diop. Women's role in economic development: Overcoming the constraints. Paper for the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda. Sustainable Development Solution Network. Global Initiative for The United Nation; 2015.
7. Gregorian H. Impact of Gender Mainstreaming in Rural Development and Milenium Development Goal (MGD). UNDP Gender Mainstreaming Annual Conference, January 2007. Islamabad, Pakistan; 2007.
8. Sunarso. Micro, and small enterprises as a motivator and stabilizer of the Indonesian economy. Journal of Economics and Entrepreneurship. 2010; 7(1):12-17.
9. Nobari K. Mohamadkhani, Mohammad Davoudi A. The relationship between servant leadership and organizational citizenship behavior of employees at valiasr academic complex, Islamic Azad University-Central Tehran Branch. International Journal of Management and Business Research. 2014;4(4):247-254.
10. Smith. Assessing the contribution of the 'theory of patriarchy' to the entrepreneurship and family business literatures. International Journal of Gender and Entrepreneurship. 2014; 6(3):255-275.
11. Husain, Li Xiao Xiao. The antecedents of women leadership in SMEs: The Malaysian senior female managerial perspective. International Journal of Business and Management. 2016;5(11): 179-2010.
12. Marlow, Mcadam. Gender and Entrepreneurship: Advancing debate and challenging myths; exploring the mystery of the under-performing female entrepreneur. International Journal of Entrepreneurial Behaviour & Research. 2013;19(1):21-29.
13. Eriyatno dan Larasati L. Ilmu Sistem: Meningkatkan Integrasi dan Koordinasi Manajemen. Jilid 2. Guna Widya. Surabaya; 2013. (Indonesia).
14. Marimin. Technique and application of multi criteria decision making Grasindo. Jakarta; 2008.
15. Marimin dan Maghfiroh N. Application of decision making in value chain management. IPB Press. Bogor; 2010.
16. Kholil, Octaviani R. Application of AHP Method for selecting the best strategy to reduce environmental damage caused by non metallic mining Case study in Gunungkidul Regency, Yogyakarta, Indonesia. International Journal of Environmental Engineering Science and Technology Research. 2013;1(7):98-109. ISSN: 2326-3113.
17. Dal, Didia, Freeman P, Assad JC, Jing Yuan. Foreign capital, domestic policy, and economic growth: The case of Nigeria. Journal of Applied Economics and Business Research. 2015;5(4):233-244.



18. Kholil SL. Susanty dan soecahyadi. Potential leading resources in Padang Panjang city, West Sumatra: The Development of Regional Economic Based on Soft System Methodology (SSM). Journal Science Research and Repport. 2016;9(7):1-9.
19. Kanungo S, Bhatnagar VK. Beyond generic models for information system quality, the use of Interpretive Structural Modelling (ISM). System Research. 2002;19(1):531-549.
20. Abdulmanap NM, Fahmi S, Sidique A, Ismail NW. International Journal of Economics and Management. 2015; 9(8):181–191.
21. Sukiman E. T. Sule, Sucherly, Sari D. The affect of value creation and business strategy to business performance of Indonesian green tea product. International Journal of Economics Commerce and Management. 2016;4(5):398-413.
22. Benneth N. Sustainable livelihoods from theory to conservation practice: An extended annotated bibliography for prospective application of livelihoods thinking in protected area community research. Protected Area and Poverty Reduction Alliance. Working Paper. No. 1. Victoria, Canada; 2010.
23. Montez et al. The sustainable livelihoods approach and the community capitals framework: The importance of system-level approaches to community change efforts. Journal of the Community Development Society. 2009;40(2):23-31.
24. Allen T, Thomas A. Poverty and development into the 21<sup>st</sup> century; 2000.
25. Carney D. Sustainbale livehood approaches. Department for Interna sional development. Toronto, Canada; 2002.

© 2016 Sukamdani et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*

*The peer review history for this paper can be accessed here:  
<http://sciencedomain.org/review-history/16586>*